

REMARKS

I. The Outstanding Rejections And Objection

In the Office Action, the Examiner maintained the rejection of claims 2 and 26 under 35 U.S.C. § 112, second paragraph, for indefiniteness in failing to unambiguously define the meaning of "about 0.1% (v/v) acetic acid." The Examiner also rejected claims 1-4, 8, 10, 22-23, and 26 under 35 U.S.C. § 102(b) over U.S. Pat. No. 5,407,816 (Bringi et al.), asserting in part that Bringi et al. disclosed intact, living plant parts in the form of isolated cell and callus cultures. Additionally, the Examiner rejected claims 1-4, 7-10, 22-23, and 26 under 35 U.S.C. § 103(a) over Bringi et al. (isolation of therapeutic taxol/taxane compounds from isolated cell and callus cultures), and U.S. Pat. No. 5,620,875 (Hoffmann et al.) (production of taxol/taxane compounds from live plant cuttings), taken with Staba et al., *Plant Tissue Culture as a Source of Biochemicals*, CRC Press, Inc., Boca Raton, Florida, pp. 7 and 237 (1980) (various therapeutics are found in various plants and auxins, which are acetic acid derivatives, are plant growth regulators). Further, the Examiner rejected claims 6 and 24 under 35 U.S.C. § 103(a) over Bringi et al., and Hoffmann et al., taken with Staba et al., and U.S. Pat. No. 4,871,574 (Yamazaki et al.) (macerating plant material to obtain therapeutics). Further, the Examiner rejected claims 11-21 and 25 under 35 U.S.C. § 103(a) over Bringi et al., Hoffmann et al., and Staba et al., in view of Stevens et al., *Phytochemistry*, 39(4):805-813 (1995) (isolation of therapeutic flavonoids from leaf cuticle) and U.S. Pat. No. 3,810,990 (Jurd et al.) (antimicrobial activity of flavonoids). Finally, the objection to claim 22 for containing typographical errors was maintained.

II. Preliminary Remarks Regarding The Amendment

The amendment to claim 22 corrects typographical errors that would have been recognized as such by one of ordinary skill in the art. Accordingly, the amendment does not include new matter. Applicant does not intend by any amendment to abandon the subject matter of any claim previously presented. Applicant reserves the right to pursue the subject matter of such claims during prosecution of this or subsequent applications. Claims 1-4 and 6-26 are currently pending and stand rejected. Claim 22 is amended herein. Thus, claims 1-4 and 6-26 will be pending upon entry of the present amendment.

III. Claim Objection

Claim 22 remains subject to objection for retaining typographical errors and for asserted errors in plant names. Applicant has amended claim 22 herein, thereby correcting the asserted errors. Accordingly, the objection may properly be withdrawn.

IV. Patentability Arguments

A. The Claims Are Novel And Nonobvious Under 35 U.S.C. §§ 102 and 103(a)

The Examiner maintained the rejection of claims 1-4, 8, 10, 22-23, and 26 under 35 U.S.C. § 102(b) over Bringi et al., asserting that the reference discloses a method for eliciting therapeutic compounds, such as taxol and taxanes, from plant cell cultures and callus cultures. Office Action at pages 4 and 13. The Examiner further asserted that the "intact, living plant or plant part" recited in the claims includes cell and callus cultures. *Id.* at 13. Finally, the Examiner asserted that Applicant admitted that "[t]he instant application does not provide definitions which would exclude plant cell culture, callus or even plant cuttings" from the claimed invention, citing to page 15, paragraph 2, lines 8-9 of Applicant's response filed May 1, 2003 in support thereof. *Id.*

The Examiner further maintained the rejection of various claims under 35 U.S.C. § 103(a) over Bringi et al. and Hoffmann et al., with or without additional reliance on Staba et al., Yamazaki et al. and/or Jurd et al. In support, the Examiner relied on Bringi et al. as disclosing the claimed methods in terms of isolated cell and callus cultures and on Hoffmann as disclosing that taxol and taxanes are produced from plant parts (e.g., living plant cuttings) other than cell and callus cultures. (Office Action at pages 7-8.) The secondary references were relied on for disclosures that various plants produce various therapeutic compounds (Staba et al.), that acetic acid derivatives (e.g., auxins) are plant growth regulators (Staba et al.), that macerating plants elicits therapeutic compounds (Yamazaki et al.), that therapeutic flavonoids may be extracted from leaf cuticle (Stevens et al.), and that flavonoid compounds exhibit an antimicrobial property (Jurd et al.). (Office Action at pages 8 and 10-11.) With respect to the secondary references, the Examiner asserted that reliance was not misplaced in that the references were relied upon for the proposition that extracting, exudating, macerating, and assaying plant-derived compounds were known in the art. (Office Action at page 14.)

Applicant respectfully traverses the rejection. At issue with respect to the anticipation rejection under § 102(b) and the obviousness rejections under § 103(a) is whether an "intact, living plant or plant part," as recited in the claims, includes an isolated plant cell culture or callus culture. To clarify the record, Applicant asserts that the claim phrase "intact, living plant or plant part" does not embrace an isolated cell culture or a callus culture. Further, Applicant respectfully disagrees with the Examiner's assertion at page 13 of the Office Action that Applicant made any admission that a definition for this phrase that excluded cell and callus cultures was lacking in the application. In the passage of Applicant's prior response upon which the Examiner relied, Applicant actually stated that the application did not contain a definition of the phrase that included cell and callus cultures. Nowhere did Applicant state that any definition was lacking. Moreover, with respect to Applicant's assertions regarding misplaced reliance on secondary references, that assertion was based on the defects in the primary reference. Thus, reliance on any of the cited secondary references to supplement the disclosure of the primary reference was misplaced. Accordingly, the outstanding issue in the present case is whether "intact, living plant or plant part," as recited in the claims, includes an isolated plant or callus culture.

The specification states that "the plants are capable of being grown and maintained in a manner of continuous growth, i.e., without destroying the plant. The plant or plant parts can be grown without any organic supplements although an organic supplement could be used if desired. As such the plant or plant parts are different than plants or plant parts that are cultured in a laboratory which generally require organic nutritional supplements and sterile conditions in order to maintain growth." Page 12. Moreover, the abstract recites that "[i]ntact living plants or plant parts are contacted with water to extract from the plant or plant part exuded chemical compounds, with the extracted chemical compounds subsequently being recovered from the water." Isolated cells cannot exude; rather, they secrete.

In addition, Applicant has previously argued that construing a "plant part" to include isolated plant cells would effectively render meaningless an expressly recited term of claim 1. In its presently pending form, claim 1 recites that the plant or plant part is "intact" and "living." To be alive, a plant cell must be intact because no known cell can sustain life if it is not intact, and that fact was well known in the art. Thus, if claim 1 is construed to reach methods involving isolated plant cells, "intact," an expressly recited claim term, is rendered superfluous.

Bringi et al. also disclosed callus cultures. Bringi et al. stated that "[a]s used herein, the term 'callus' is used to describe a mass of cultured plant cells that is structurally undifferentiated, and is cultivated on solidified medium." Thus, callus cultures are masses of undifferentiated cells growing in culture. One of ordinary skill in the art would not recognize such cells as an intact plant or as any intact plant part.

For the foregoing reasons, i.e., (1) the plant or plant part recited in the pending claims can be grown without any organic supplementation and are distinguishable from materials grown in laboratory culture, (2) the plant or plant part can exude a desired compound, (3) the term "intact" is rendered superfluous in referring to a plant cell culture as an "intact, living plant or plant part," (4) the clarifying remarks regarding the definition of the phrase "intact, living plant or plant part" contained herein and in Applicant's previous response of May 1, 2003, and (5) that a callus is a mass of undifferentiated plant cells not corresponding to any intact plant or intact plant part, Applicant submits that the application and the entire intrinsic record clearly and unambiguously define an "intact, living plant or plant part" to exclude isolated cell and callus cultures. Therefore, Bringi et al. is defective in failing to disclose, expressly or inherently, an intact, living plant or plant part for use in the claimed methods. Accordingly, the rejection of claims 1-4, 8, 10, 22-23, and 26 under 35 U.S.C. § 102(b) over Bringi et al. has been overcome and should be withdrawn.

With respect to dependent claims drawn to the use of acetic acid as an elicitor, Applicant also disagrees that any of the cited references discloses or suggests the use of acetic acid as an elicitor. An acetic acid derivative is a distinct chemical compound from acetic acid and the use of a derivative does not disclose or suggest the use of acetic acid itself. Consistent with this position, the application-as-filed recites that "although acetic acid may be a very basic precursor of the indole-3-acetic acid pathway in plants, to the best knowledge of the applicants the literature has neither suggested nor reported any utility of acetic acid as a precursor." (Specification, page 13, lines 14-16.)

Applicant continues to maintain that none of the other references cited by the Examiner, Hoffmann et al., Staba, Yamakazi et al. or Jurd et al. remedies the above-identified defect in Bringi et al. (i.e., discloses or suggests use of an intact, living plant or plant part in the claimed methods). For that reason, each of the claim rejections under 35 U.S.C. § 103(a) over various combinations of references has been overcome and should be withdrawn.

For the foregoing reasons, Applicant submits that the pending claims remain free of the cited art. Accordingly, each of the pending art-based rejections of the claims has been overcome and should be withdrawn.

B. Claims 2 and 26 Are Definite Under 35 U.S.C. § 112, Second Paragraph

The Examiner maintained the rejection of claims 2 and 26 under 35 U.S.C. § 112, second paragraph, as assertedly indefinite for reciting a concentration of acetic acid in terms of percent volume without clarifying the reference volume. Specifically, the Examiner stated that "it is uncertain whether the claimed concentration is a final concentration in some unidentified system (volume) comprising plant and acetic acid or whether the claimed concentration is a concentration of an original contacting composition/solution which is further diluted in the 'aqueous medium'" (Office Action at page 2.)

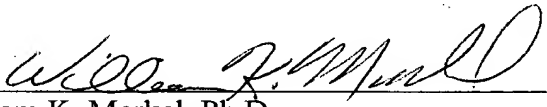
Applicant submits that claims 2 and 26 as presently pending are definite. Each of the subject claims recites that a living, intact plant or plant part is contacted with "about 0.1% (v/v) acetic acid." The term "v/v" has an ordinary and accustomed meaning in the art of a relative concentration of one fluid in another fluid, and in the context of an acid like acetic acid, the ordinary and accustomed meaning of the term "v/v" is the volume of concentrated, or glacial, acetic acid relative to the total volume of the fluid (e.g., water or an aqueous medium) comprising the acetic acid. The present application, including the recitations in claims 2 and 26, uses the term "v/v" in a manner that is entirely consistent with this ordinary and accustomed meaning. The fluid that is brought into contact with the living, intact plant or plant part has an acetic acid concentration of about 0.1% v/v. Thus, about 0.1% of the volume of that fluid will be the volume of acetic acid contained therein. If the acetic acid is brought into contact with the living, intact plant or plant part by, e.g., spraying, it is the fluid sprayed that comprises about 0.1% (v/v) acetic acid. If the acetic acid is brought into contact with the living, intact plant or plant part through an aqueous medium, it is the total volume of aqueous medium that is about 0.1% (v/v) acetic acid. Applicant submits that the claims as presently pending would be unambiguously understood by one of ordinary skill in the art as reciting these concentrations of acetic acid. Moreover, Applicant's statements herein further clarify for the record the meaning of "about 0.1% (v/v) acetic acid."

For the foregoing reasons, Applicant submits that the rejection of claims 2 and 26 under 35 U.S.C. § 112, second paragraph, for asserted indefiniteness has been overcome and should be withdrawn.

VI. CONCLUSION

In view of the amendment and remarks made herein, Applicants respectfully submit that claims 1-4 and 6-26 are in condition for allowance and respectfully request expedited notification of same.

Respectfully submitted,
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